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FECH CENTER 1600-2000

# Seq Listing.txt SEQUENCE LISTING

```
110> Slean-Kettering Institute for Cancer Research
      Fothman, James E.
      Mayhew, Mark
      Hoe, Mee H.
      Houghton, Alan
      Hartl, Ulrich
      Guerfelli, Ouathek
      Moroi, Yoichi
RATE OF CONTUGATE HEAT SHOCK PROTEIN-BINDING PEPTIDES
V190V 11746/46002
×140× 10/053,498
(141) 2002-01-17
+:100: 68/961,707
+(15:10 1997-10-31
+:1600 - 321
<170 WordPerfect 8.0 for Windows</p>
-210 > 1
+211> 8
<212> PET
<:213> Artificial Sequence
-1220 -
*233* peptide in ml3 coliphage
+4400 > 1
His Thr Thr Val Tyr Gly Ala Gly
-010-2
 <u>2011</u>. 9
Hall - PET
M213 Artificial Sequence
3.220%
-:2:3 - peptide in ml3 coliphage
<(400 → 2
```

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Seq Listing.txt
Thr Glu Thr Pro Tyr Pro Thr Gly
<210> 3
.011> 8
<312> PRT
<213> Artificial Sequence
· 220%
<3030 peptide in m13 coliphage</pre>
- 1000 B
Lou The Thr Pro Phe Ser Ser Gly
-110-4
 8
+ 3112 + PRT
+213 + Artificial Sequence
~223 peptide in m13 coliphage
· 400 · 4
Gly Val Pro Leu Thr Met Asp Gly
· 210 · 5
+.211 + .8
+212+ PRT
*215 Artificial Sequence
< 0.20%
-223 peptide in m13 coliphage
-400 > 5
Lys Leu Pro Thr Val Leu Arg Gly
· 310 · 6
+211 + 8
· 212 · PRT
- 213 - Artificial Sequence
-.22:1-
```

```
Seg Listing.txt
+223> peptide in m13 coliphage
4.4000> €
Cys Arg Phe His Gly Asn Arg Gly
.210> 7
. 211: €
· 212 FRT
<:13> Artificial Sequence
- 220°-
-.223 / peptide in m13 coliphage
+400 \times 7
Tyr Thr Arg Asp Phe Glu Ala Gly
· 110 · 8
-.111 - 8
-.211 FFT
· 113 · Artificial Sequence
<.200 c
<223> peptide in m13 coliphage
<400× 8
Ser Ser Ala Ala Gly Pro Arg Gly
<.210> 9
W.0115 8
<212> FRT
4013 > Artificial Sequence
-.020 ·
<223 > peptide in m13 coliphage
400 > 3
Ser Leu Ile Gln Tyr Ser Arg Gly
1.:10 - 10
+.211.+ ¥
                                 Page 3
```

4.212> PPT \*213> Artificial Sequence <3230 peptide in m13 coliphage</pre> +2221 MISC FEATURE  $+0.222. \cdot (7)...(7)$ +223 - ur.known  $+400 \times 10$ Asp Ala Leu Met Trp Pro Kaa Gly  $\cdot 1110 \cdot 11$ + 211 × 8 .111 PF.T -\_13 Artificial Sequence -1220 × -:::: peptide in m13 coliphage -1220 -.331 MISC\_FEATURE  $\times 222 \cdot (3) ... (3)$ √223 - unknown <400 > 11Ser Ser Xaa Ser Leu Tyr 11e Gly +0.010 - 12:::111 · 8 -212 PRT +2213 · Artificial Sequence -:220.-\*::23 · peptide in m13 coliphage  $\pm 1400 + 12$ Phe Asn Thr Ser Thr Arg Thr Gly 5 1

1210 - 13

```
Seq Listing.txt
<211: 8
<210: PPT
<213: Artificial Sequence
<220:
<223: peptide in m13 coliphage
```

Thr Val Gln His Val Ala Phe Gly

<...101 14
</pre>
<.211 + 8
<<pre><.2120 PFT</pre>

<213 Artificial Sequence

 $\times 11.000 \times 10^{-10} \, \mathrm{M}_{\odot}^{-1}$  such that in ml3 coliphage

+14000 14

<4000-13

Asp Tyr Ser Phe Pro Pro Leu Gly
1 5

<210 + 15 <211 × 8 <212 × PPT

<213% Artificial Sequence

<220 s

<.mr</pre> peptide in ml3 coliphage

<400 % 15

Val Gly Ser Met Glu Ser Leu Gly

<0210 x 16
<211 x 8
<012 x PRT</pre>

<213 / Artificial Sequence

·:22() ·

+11133 peptide in m13 coliphage

a.1.1.1 ·

%221 \* MISC\_FEATURE

```
+:2220 \cdot (2) ...(2)
+2223 unknown
4.2.100e
RELEATURE MISC FEATURE
(6)...
HIIII unknown
-1400 \cdot 16
Phe Maa Pro Met Ile Maa Ser Gly
1210 17
:::11 8
-:211 PRT
Artificial Sequence
412247
-2233 · peptide in ml3 coliphage
<4.06 \times 1.7
Ala Pro Pro Arg Val Thr Met Gly
₹210≥ 18
<2111 8
<212% PRT
<::13 · Artificial Sequence</pre>
- 220 -
+:400 × 18
ile Ala Thr Lys Thr Pro Lys Gly
41.10 \cdot 19
<2211 - 8
-13.13 · PRT
H213 · Artificial Sequence
-:225 -
+223 - peptide in m13 coliphage
```

(400) 19

```
Lys Pro Pro Leu Phe Gln Ile Gly
H2100 20
.111 > 5
HILLS PFT
2013 Artificial Sequence
k(210)+
· 4000 - 20
Tyr His Thr Ala His Asn Met Gly
 1
*::10 - 11
.211 8
• 12:100 - FFT
+213 · Artificial Sequence
+M23 - peptide in m13 coliphage
+400 + 21
Ser Tyr Ile Gln Ala Thr His Gly
-210 - 22
+1211 + 8
+ 212 + PRT
+213 > Artificial Sequence
< 1.7 \, \mathrm{GeV}
#223 - peptide in m13 coliphage
+1400 × 32
Ger Ser Phe Ala Thr Phe Leu Gly
 1
0.210 \pm 23
\pm 211 + 8
1.11. PRT
<213 · Artificial Sequence</pre>
```

```
Seq Listing.txt
<
4400 - 13
Thr Thr Pro Pro Asn Phe Ala Gly
F12.10 × 2.4
1...11 + 9
41111 PRT
200 July 1980
+000% peptide in m13 coliphage
4.15. . 4
He Jer Leu Asp Pro Arg Met Gly
+ J100+ 25
- 211 - B
+1120 PFT
+2135 Artificial Sequence
- (220) ·
% 133 peptide in m13 coliphage
+14000+ 25
Sor Leu Pro Leu Phe Gly Ala Gly
\pm 2100 \pm 26
0.01110 8
-0120 PET
42733 Artificial Sequence
-12.201
H2230 peptide in m13 coliphage
44001-26
```

Asn Let Leu Lys Thr Thr Leu Gly

1

·1210> 27

Page 8

Asp Glm Asn Leu Pro Arg Arg Gly

+213 · Artificial Sequence

. \* \*\* :
\*\*.2\* \* poptide in ml3 coliphage

400 + 1.5

Jer His Phe Glu Glm Leu Leu Gly

+01100+ 09 +011 × 8 +0110> PET

+213 Artificial Sequence

+1220°+

HARR + peptide in ml3 coliphage

1400차 교명

The Free Gln Leu His His Gly Gly

+,2100 × 0 + 2110 ÷ + 2120 FFT

+0.0130 Artificial Sequence

·1.1. 0. ·

</p

<400> 30

```
Seq Listing.txt
Ala Pro Leu Asp Arg Ile Thr Gly
<210 \cdot 31
<211 ⋅ €
REAL PRT
+213 · Artificial Sequence
-1220 -
+0.23 \cdot \text{peptide} in m13 coliphage
8400 × 31
Phe Ala Pro Leu Ile Ala His Gly
ស្មារាក ស ខ្មា
4.7.1.1 é
-111 PET
1113 Artificial Sequence
.,220 -
***** reptide in m13 coliphage
<400 → 32
Ser Trp Ile Gln Thr Phe Met Gly
 1
<010 × 33
...11 - 8
· 1111 > PFT
1213 Artificial Sequence
<2.220 \approx
<pr
-14001-33
Asn Thr Trp Pro His Met Tyr Gly
 1
+12101 - 34
12111 8
-12171 FET
· ... i. · Artificial Sequence
₹220>
```

```
Seq Listing.txt
H223> peptide in m13 coliphage
4401 - 34
Glu Pro Leu Pro Thr Thr Leu Gly
40109 35
<211 - 8
:212 · PET
*M13* Artificial Sequence
· 2:2:0
\sim 2.5 \times {
m peptide} in ml3 coliphage
+14000 35
His Haly Pro His Leu Phe Ash Gly
                  5
-1210. 36
\cdot (0.11 + 8
\{1,7,7,2,\dots,PET
+2213 - Artificial Sequence
· 220>
+12.33 peptide in m13 coliphage
-1400 > 36
Tyr Leu Asn Ser Thr Leu Ala Gly
<210> 37
-0.115 8
-12121- PPT
+213> Artificial Sequence
HIDB: poptide in m13 coliphage
-1400h 37
His Leu His Ser Pro Ser Gly Gly
H.:101-38
<211> 24
```

# Seq Listing.txt <212> DNA · 213 · Artificial Sequence . 220 · 223 · DNA insert in M13 coliphage × 400 × 38 catacgactg tttatggggc tggt .210 . 33 - 211 - 34 .21% DNA +213 Artificial Sequence + 173 - random DNA in m13 coliphage -400 - 39 actgagacgo ottatoctac tggt +.110 + 40 $\cdot \, 211 + 34$ -212 - DNA +213 - Artificial Sequence <2200> $\times 223 \times \text{random DNA in m13 coliphage}$ < 400 > 40 Attactacto egittiegio ggyt +210 + 41 - 211 - 24 · DIA · DNA +213 Artificial Sequence

24

24

24

24

-400-31

· [11](), ·

agtatgeete ttacgatgga tggt

-223- random DNA in m13 coliphage

+ 0102+ 42

4.2111- 24

Seq Listing.txt	
#212 · DNA #213 · Artificial Sequence	
<pre>&lt;2220&gt; &lt;2223&gt; random DNA in m13 coliphage</pre>	
+.400 + 42	
aagsttesga etgttetgeg gggt	24
+210 + 43 +211 + 24 +212 + DNA +213   Artificial Sequence	
killo k killo kandom DNA in m13 coliphage	
5.400 ± 43	
Equalitation at gggaateg tiggt	24
+210 + 44 +211 + 24 +213 * ONA +213 * Artificial Sequence	
K2200 K2230 random DNA in m13 coliphage	
-0400. 44	
talautuggg attitgaggo tggt	2.4
+210> 45 +211> 24 +212> DNA +213> Artificial Sequence	
+ 2000 - CL230- random DNA in m13 coliphage	
+.4000-45	
togloggogg ctggtccgcg gggt	24
∀C1€ + 46 ₹211 + 24	

. 7 1 7	Seq Listing.txt	
::212 · :::213 ·	Artificial Sequence	
1220 +	random DNA in m13 coliphage	
-(400)	46	
tototo	gatto agtattogag gggt	24
H210 H H211 H H212 H H213 H	24	
3000 + 3223 +	random DNA in m13 coliphage	
	MISC_FEATURE (19)(19) unknown	
400 -	4?	
gatgot	outa tgtggcctnt gggt	24
<pre>&lt;210 + &lt;211 + &lt;212 / &lt;213 +</pre>	1.4	
10000 / 10003 /	random DNA in m13 coliphage	
- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	MISC_FEATURE (8)(3) unknown	
-(400)	48	
tegtet	cntt cgttgtatat tggt	24
+:210; +:::11:- +:::12:- +::213:-	$\mathcal{L}_{\mathbf{G}}$	

<pre>#220 + #223 - random DNA in m13 coliphage</pre>	
-400-49	
tttaatautt ogabgogtad gggt	24
+210 + 50 +211 + 24 +212 + DNA +213 + Artificial Sequence	
-000 - -000 - random ENA in m13 coliphage	
- <b>1</b> 00 - 50	
adigtgoago atgutgotti tggt	. 4
+210+51 +211+24 +212+DMA +213-Artificial Sequence	
+MMCC+ +MMBC+ random DNA in ml3 coliphage	
+4002 51	
quitattett treegestet tggt	24
HOTOH SO HOTOH SO HOTOH DNA HOTOH Artificial Sequence	
-0.000 -0.000 random DNA in m13 coliphage	
-04000- 50	
qr.ggagtota tggagtogtt gggt	24
+CD10.+ 53 -CD11.+ 24 +CD12.+ DNA +CD13.+ Artificial Sequence	

<220×	random DNA in m13 coliphage	
<222.5	MISC_FEATURE (6)(6) unknown	
<pre></pre>	MISC_FEATUFE [16](16) unknown	
*.220 + .021 *000	MISC_FEATURE (18)(13) unknown	
$A_{1}^{*}(t)(t)$	5, 3	
tittea	nedga tgattngnto gggt	24
+210 + +211 + +212 + +213 +	4	
<220× <223÷	random DNA in m13 coliphage	
- 400		
gegeet	loogo gggttactat gggt	24
<pre></pre>	ሊያ ሬቹ	
220 + + 233 +	random DNA in m13 coliphage	
· 4000	$\xi, \xi$	
atin wit	acga agacgostaa gggt	24
	c. (	

## Seq Listing.txt -211-24 \*213 \* CNA <213 - Artificial Sequence - 229 c323 - random DNA in m13 coliphage 4400 % 56 aagcotoogt tgtttcagat tggt 24 -210 57 (0111 - 24 <212 - CHA -213 - Artificial Sequence · . '.' (i) · - 113 - random DNA in m13 coliphage 400 - 57 talcatactg ctcataatat gggt 24 $\times 210 \times 58$ -11 . 1 -210- DNA <213 Artificial Sequence</p> <220% <223 / random DNA in m13 coliphage 3400× 58 tottatatto aggotacgoa tggt 24 7.110 × 59 ·211 · 24 \*2129 DNA \*213 Artificial Sequence + 2.10 × +023 - random DNA in ml3 coliphage + 400 + 59 '":: :tt:tg ctacttttct tygt 24

4.210.460

Seg Listing.txt	
<211 - 04 <0210 - DNA <0213 - Artificial Sequence	
<pre>&lt;:220 + &lt;:223    random DNA in m13 coliphage</pre>	
<400 - 60	
acgastosgs cgaattttgs gggt	24
+210 + 61 +211 + 24 <212 + BMA <213 + Artificial Sequence	
egagen. Cll3 - Fandom DNA in m13 coliphage	
4400 · 61	
atttotottg atcogogiat gggt	4
+210 + 61 +211 + 34 +212> DNA <213> Artificial Sequence	
<2230 random DNA in ml3 coliphage	
K4000K 61	
togotgoogo tgtttggtgo gggt	24
<pre>&lt;210&gt; 63 &lt;211&gt; 24 &lt;212&gt; PNA &lt;213&gt; Artificial Sequence</pre>	

aatettetta agaetaeget tggt

<22332 random DNA in m13 coliphage</pre>

<22002

-14001-63

€2100 64

\_4

Seq Listing.txt	
· 211 · 24 · 312 · DNA · 313 · Artificial Sequence	
+323 + random DNA in m13 coliphage	
+ 400 + 64	
qatragaato tgoogoggg gggt	2 4
-210   65   311   24  -212   DMA  -213   Artificial Sequence	
<pre>+ Alte + + Alte + random DNA in m13 coliphage</pre>	
a 400 - 65	
agtomatiting agoagotgot tggt	24
+ 216 + 66 - 211 + 24 + 211 + 5NA + 213 + Artificial Sequence	
+220> +223> random DNA in m13 coliphage	
$\sim400$ $<66$	
acgoogoago ttoatoatgg tggt	4
+ 210 + 67 + 211 + 24 + 210 × DNA + 213 × Artificial Sequence	
-220% -223% random DNA in m13 coliphage	
+400 + 67	
gogestetgg ataggattac gggt 2	4

-210 63

# Seq Listing.txt <211 - 24 · D10 > DNA $\cdot$ 113 $\cdot$ Artificial Sequence . 12:1. <2235 random DNA in m13 coliphage 4400 - 68 titgegeete ttattgegea tggt 24 5.710 - 69 22115 34 72185 DNA %313 Artificial Sequence 7.30 × Plant random DNA in m13 coliphage · 100 · 63 ligtagaitt agacgtttat gggt 24 -310 + 70+1.11 + 24- 012 - DNA \*313 \* Artificial Sequence K220 -\*:323 random DNA in m13 coliphage -400× 70 astacttygo otdatatgta tggt 2:4 $+210 \times 71$ · 111 · 24 4212 - DNA +213 · Artificial Sequence #223 / random DNA in m13 coliphage · 400 · 71

Page 20

24

quipositosito egactaegti gggt

	Seq Listing.txt	
<pre>&lt;211 &gt; &lt;112 + &lt;113 +</pre>		
+220+ +223+	random DNA in m13 coliphage	
< 40000	72	
catagg	gooto atotgtttaa tggt	24
210 -211 -211- -212- -213-	14 DNA Antificial Sequence	
40.00 4 40.03	random ENA in m13 coliphage	
400	73	
tatotg	aatt ctacgcttgc tggt	24
+210 + +211 + +212 + +213 *	24	
<220 / <223 ·	peptide in m13 coliphage	
< 400 ·	74	
catctt	cata gtccgtcggg gggt	24
+ 010 + + 011 + + 0120 + + 0130 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 01000 + + 010000 + + 010000 + + 010000 + + 0100000 + + 01000000 + + 0100000000	8	
4210 · • 333 ×	random peptide in m13 coliphage	
. 400 -	75.	
Thr Le	u Pro His Arg Leu Asn Gly 5	

```
< 210 - 76
-211 - 8
·111 · PET
· 113 · Artificial Sequence
· *11.2:11 ·
+123 · peptide in ml3 coliphage
- 400 - 76
Ser Ser Pro Arg Glu Val His Gly
\sim 1.1 \odot \times 5\%
.:11 - 8
~112 · FFT
Hills Artificial Sequence
HERRY peptide in ml3 coliphago
플릭 및 기가
Ash Glm Val Asp Thr Ala Arg Gly
\pm 1210 + 78
\leq 211 + 8
·1212 · FFT
MANA Artificial Sequence
-1020 ·
+2223 - peptide in m13 coliphage
-14001-78
Tyr Fro Thr Pro Leu Leu Thr Gly
-.10 - 79
-111 - 8
0012 + PET
H213 / Artificial Sequence
K220 -
42.23 peptide in m13 coliphage
(400> 79
```

```
His Pro Ala Ala Phe Pro Trp Gly
<210 ⋅ €0
4211 €
SID1D - PRT
+0013 · Artificial Sequence
-1020-2
<223 - peptide in m13 coliphage</p>
-6400 - E0
Leu Leu Pro His Ser Ser Ala Gly
4.114 9.
4211 - 3
HULL - FRT
+...11? * Artificial Sequence
\{(i,j),(i,j)\}
+323 + peptide in m13 coliphage
<400. €1
Leu Glu Thr Tyr Thr Ala Ser Gly
  1
<2100 82
40110 €
·MILTI- PET
<213> Artificial Sequence
·*2200
peptide in m13 coliphage
×14000 82
Lys Tyr Val Pro Leu Pro Pro Gly
+2100 83
...11. 8
... 121. PFT
4213: Artificial Sequence
```

+ 223 \*
+ 223 \* peptide in m13 coliphage

· 400 · 83

Ala Pro Leu Ala Leu His Ala Gly 1

× 210 × 84

.211 - 8

· 2111 PRT

213 Artificial Sequence

2.20

+223 · peptide in m13 coliphage

+ 400 + 84

Tyr GPu Ser Leu Leu Thr Lys Gly

- 210 - 85

+0.11 + 8

· 111 · PRT

+313 - Artificial Sequence

× 220×

\*223> poptide in m13 coliphage

< 400 > 85

Sor His Ala Ala Sor Cly Thr Gly

:2100 86

-211 - 8

-212 - PET

+213 : Artificial Sequence

· 22.01

·2230 peptide in m13 coliphage

· 4000 · 86

Gly Leu Ala Thr Val Lys Ser Gly

+.21C> 87

```
.:211 · 8
4212 · PRT
4213 Artificial Sequence
4220 -
HCCCC peptide in m13 coliphage
-.400 + .87
Gly Ala Thr Ser Phe Gly Leu Gly
.210 - 51
40113 · PRT
ACTION Artificial Sequence
-A23 - peptide in ml3 coliphage
\pm 3400 + 58
Lys Fro Pro Gly Pro Val Ser Gly
+210 + 89
-12112 8
-.212> PRT
+213> Artificial Sequence
+.2201+
%2.230 peptide in m13 coliphage
44002 89
Thir Leu Tyr Val Ser Gly Asn Gly
+1100-90
- J1133- 8
+0.100 + FFT
+213 Artificial Sequence
\pm 22.33 peptide in m13 coliphage
```

-(400) - 90

```
Seq Listing.txt
His Ala Pro Phe Lys Ser Gln Gly
<2105 91
<2211 - 8
<!212 > PRT
3213> Artificial Sequence
-1220 -
H223 · peptide in m13 coliphage
V400 x 91
Wai Ala Phe Thr Arg Leu Pro Gly
.010 - 92
\pm 7.11 \times 8
4. 11 4 + FET
H113 - Artificial Sequence
4111.0 +
%223 - reptide in m13 coliphage
-1400 - 92
Leu Pro Thr Arg Thr Pro Ala Gly
H210 - 93
-1.111 - 8
·1211 - FFT
 113 Artificial Sequence
4220h
+223% peptide in ml3 coliphage
+14001+ 93
Ala Ser Phe Asp Leu Leu Ile Gly
-00100- 94
11.121 PFT
+213 - Artificial Sequence
4.2201-
                                Page 26
```

```
Seq Listing.txt
<223> peptide in m13 coliphage
+(400+94
Arg Met Asn Thr Glu Pro Pro Gly
4210 - 95
F211 - 8
4212 - PRT
<!217   Artificial Sequence</pre>
2125 ×
3003 - peptide in ml3 coliphage
+1400 + 95
mys Met Thr Pro Leu Thr Thr Gly
-0110 × 96
-1.11 + 8
+17.179 + -89.5 \,\mathrm{T}
+213 - Artificial Sequence
- 2201-
+2230 peptide in m13 coliphage
+14001- 96
Ala Asn Ala Thr Pro Leu Leu Gly
42101 97
42115 8
·2120 FFT
+213: Artificial Sequence
MM230 poptide in ml3 coliphage
+14001- 97
Thr He Trp Pro Pro Pro Val Gly
H.:10: 98
<211> 8
                                 Page 27
```

- ::212 PRT
- +213 · Artificial Sequence
- :220 -
- $+223 \cdot \text{peptide}$  in m13 coliphage
- · 400 · 98
- Gin Thr Lys Val Met Thr Thr Gly
- + <u>11</u>0 + 99
- 211 8 -111 PF:T
- <!!!! Artificial Sequence</pre>
- . 220 .
- +:''' peptide in m13 coliphage
- 400 99
- Asn His Ala Val Phe Ala Ser Gly 1
- -210 100
- <211 · 8
- <212 PRT
- <213 Artificial Sequence
- < 2200
- $\pm 333 \times \text{peptide in m13 coliphage}$
- . 777.
- \* 221 MISC FEATURE
- < 222 + (5) .. (5)</pre>
- · 223 unknown
- +400 100
- Leu His Ala Ala Xaa Thr Ser Gly 1
- +.010 101
- · 11111 8
- 121 PRT
- · 113 · Artificial Sequence
- 4.220%

```
Seq Listing.txt
<223 \cdot \text{peptide in ml3 coliphage}
<400 - 101
Thr Trp Gln Pro Tyr Phe His Gly
32105 102
<211 + 8
41.117 PRT
H213 - Artificial Sequence
42204
HTTP://peptide in ml3 coliphage
\pm 400 + 102
Ala Pro Leu Ala Leu His Ala Gly
\pm 0.10 \pm 103
-111 - 8
40010 · PFT
+2213 · Artificial Sequence
4.220×
<:::3> peptide in m13 coliphage
<400> 103
Thr Ala His Asp Leu Thr Val Gly
<.110> 104
4212% PFT
Artificial Sequence
\langle ..., (1) \rangle
<12.3 peptide in m13 coliphage</pre>
44001 104
Asn Met Thr Asn Met Leu Thr Gly
·..:10:- 105
<211: 8
```

4313> PRT

Artificial Sequence

3.222.23

<223 · peptide in m13 coliphage</pre>

 $4400 \times 105$ 

Gly Ser Gly Leu Ser Gln Asp Gly

-1110 106

1211 8 +212 > PRT

+1113 \* Artificial Sequence

 $\mathcal{L}_{1}^{2} \cap \mathcal{L}_{1}^{2}$ 

HPPR - peptide in m13 coliphage

 $\pm 1400 \cdot 166$ 

Thr Pro Ile Lys Thr Ile Tyr Gly

+.210 + 107

·211 · 8

-010 > PRT

<213 > Artificial Sequence

41220×

H123 / peptide in m13 coliphage

100 107

Ser His Leu Tyr Arg Ser Ser Gly 1

·210 - 108

 $\cdot 1111 - 24$ 

-2121- DNA

1213 Artificial Sequence

· [ [ [ () ] ·

H1233 random DNA in m13 coliphage

-.400 - 108

actotgooto atogtotgaa tggt

+:210 + 109 +:211 + 24 +:212 + DMA +:213 + Artificial Sequence	
+020 + +023 / random DNA in m13 coliphage	
+:400 + 109	
tudaqtooga gggaggttoa tggt	24
+210 + 110 +211 + 24 12 + ENA +21s + Artificial Sequence	
+ .0+ +.13+ random DNA in ml3 ocliphage	
+ 490. + 130	
autoaggttg ataoggotog gggt	24
+0.10.+ 111 +0.11 + 24 +0.12.+ DNA +0.13/2 Artificial Sequence	
+1210.+ +1703.+ random DNA in m13 coliphage	
·:400,· 111	
tatoctacgo ogotgotgao tggt	24
+010 + 112 +011 + 24 +012 + DNA +0.13 + Artificial Sequence	
H120 + H127 random DNA in m13 coliphage	
<490> 112	
catostgotg offficettg gggt	24

<pre>#210   113 + 011   24 #010   DNA + 013   Artificial Sequence</pre>	
<pre>%220% %223   random DNA in ml3 coliphage</pre>	
±400 ± 113	
cttottoogo attotagtgo tggt	24
<pre>   *Clu = 114   *Cll = D4   *Cll = DNA   *Cll = Artificial Sequence   *Cll = Artificial Sequence</pre>	
-22: -323 random DNA in m13 coliphage	
$400 \times 114$	
uttqugaett ataeggette tggt	.24
+ 010 × 115 + 011 × 04 + 010 + DNA + 013 + Artificial Sequence	
<pre>&lt;220.0 &lt;223% random DNA in m13 coliphage</pre>	
4400 · 115	
aagtatgtgo ototgoogoo gggt	24
+010 + 116 +011 + 24 +011 + DNA +013 + Artificial Sequence	
+200+ +22%+ random DNA in m13 coliphage	
- 407 - 116	
gagangtigg cictgeatge gggt	24

<pre>&lt;210 &gt; 117 &lt;211 + 24 &lt;212 + DNA &lt;213 - Artificial Sequence</pre>	
<pre>&lt;220 + &lt;223 - random DNA in m13 coliphage</pre>	
si400 + 117	
tatgagtogo tgotgaotaa gggt	24
<pre>vd10 + 118 v211 + 24 v212 + DNA v213 + Arrificial Sequence</pre>	
Stand - Dad - random DNA in ml3 coliphage	
$(4.90) \times 112$	
totoatgogg ottotggtad tggt	24
<pre> &lt;210 + 119 &lt;211    24 &lt;211    DNA &lt;213    Artificial Sequence </pre>	
k.Mio. k223. random ENA in m13 coliphage	
<4000 119	
ggtttggoga otgttaagto tggt	24
<pre><c100 120="" 24="" <c110="" <c120="" artificial="" dna="" pre="" sequence<=""></c100></pre>	
<pre>%Indox %Indox DNA in m13 coliphage</pre>	
:400:7 120	
ggtgctacgt cttttgggct tggt	24

<pre>&lt;210 + 121 &lt;211 + 24 &lt;212 + DNA &lt;213 * Artificial Sequence</pre>	
<pre>#220 - #223   random DNA in m13 coliphage</pre>	
< 400 + 121	
www.sg.stg_ggddggtd_gggt	24
00100 002 0011 × 04 0012 · DNA 0013 · Artificial Sequence	
-,226 -	
HDD3 - random DNA in m13 coliphage	
$\pm 406 \pm 1.22$	
actotttatg titotgggaa tggt	24
<pre><c10> 123 <c11> 24 <c12> DNA <c13> Artificial Sequence</c13></c12></c11></c10></pre>	
<220 -	
<pre>&lt;023* random DNA in m13 coliphage</pre>	
<400 > 1_3	
catqotoogt ttaagtotoa gggt	24
+210 + 104 +211 + 24 +212 + DMA +213 + Artificial Sequence	
- 220 -	
<pre><!--!!! random DNA in m13 coliphage</pre--></pre>	
$04/6 \times 124$	
atygugttta ogoggottoo gggt	24

KC10 + 105 +C11 + 24 +C12 + DNA +C13 + Artificial Sequence	
<pre>+D2%- +D28- random DNA in ml3 coliphage</pre>	
+(400) + 125	
orgoogaetg etaegeegge tggt	24
12100 136 +2211 24 +33120 DMA +2130 Artificial Sequence	
<pre>+1.00. +1.13. random DNA in m13 coliphage</pre>	
+4060-106	
quagattutg atottttgat tggt	24
+.0100+127 +.0110+24 +.0120+DNA +.0130+Antificial Sequence	
+2200 +2230 random DNA in m13 coliphage	
+ 400.+ 117	
oggatgaata otgagootoo gggt	24
+ 210: 128 + 211: 24 + 212: DNA + 213: Artificial Sequence	
-1300 - -13030 random DNA in m13 coliphage	
<:400 x 10 \$	
aagatgadto ototgaogao tggt	24

<pre>*210 &gt; 129 *211 * 24 *217 * DMA *213 * Artificial Sequence</pre>	
<pre>%2100* %2230 random DNA in m13 coliphage</pre>	
+400% 119	
gogeatgriga ogodtotgot gggt	24
<pre>*.loc 150 *.211 * 24 *.213 * DNA *.313 * Artificial Sequence</pre>	
<pre>+323   random DNA in m13 coliphage</pre>	
+400 × 2:0	
actatttage etcegootgt tggt	24
<pre></pre>	
<pre>#220 &gt; #223 &gt; random DNA in m13 coliphage</pre>	
4400× 131	
cagactaagg tgatgacgac gggt	24
+010 + 132 -011 + 24 +012 + DNA +013 + Artificial Sequence	
-220 - -223 - random DNA in m13 coliphage	
- 100x 172	
Raicatgotg tittigotag tygt	24

#010 + 133 #011 + 24 #012 + DNA #013 + Artificial Sequence	
<pre>-DDD+ -DDDS-random DNA in m13 coliphage</pre>	
HIND HIST_FEATURE HIND H (13)(13) HIND HARRINGE	
1400 × 103	
nuquatgogg ctantaogto gggt	2.4
+.10 + 104 +.11 + 14 +.12 - DNA +.17 + Artificial Sequence	
ollo. -unimo random DNA in ml3 coliphage	
+400 + 134	
acgtggcage ogtattttca tggt	24
+D100+135 +D110+24 +D100+DNA +D130+Artificial Sequence	
+CP200+ +CP280+ random DNA in m13 coliphage	
+:400:- 135	
gagaagtigg atotgcatga gggt	24
+03100-136 +03110-24 +03120-DNA +0313-Artificial Sequence	
マン・ウン	

Seq Listing.txt -:223 - random DNA in m13 coliphage	
<pre>&lt;400 - 136</pre>	
unggngoung atongaongn tiggt	24
+D10 + 1 + 7 +D11 + 24 +D12 + DNA +D13 + Artificial Sequence	
0.020 0.026 rundom DNA in m13 coliphage	
+:400 + 137	
matangasta atangéthae iggt	2.4
1010 136 +011 24 +012 DMA _lb Artificial Sequence	
-0.20 -0.23 random DNA in m13 coliphage	
+:400 + 1 :8	
gattetgage tgteteagga tggt	24
FILTO: 139 FILTO: 139 FILTO: DMA FILTO: Artificial Sequence	
+M23+ +M23+ random DNA in ml3 coliphage	
+ 4000 1 + 9	
adgoogatta agaogattta tggt	24
+2100+140 +2211+24 +2212+DNA -213 Artificial Sequence	
220 +	

```
Seq Listing.txt
<223 - random DNA in m13 coliphage</pre>
-.400 \times 140
togoatotyt atogitotag tygit
<.210 - 141
.111 - 3
€212 - PRT
AMMIR · Artificial Sequence
1777
+223 - Random poptides in coliphage M13
4400. 141
Sor He He Ash Phe Glu Lys Leu
+1.130 - 143
1.111 4
SUMBLE PRI
+1713 - Artificial Sequence
+1.11(10) \pm
MARIN peptide in ml3 coliphage
<4001-142
Gly Gly Gly Ser
 1.
1910 143
42115 8
40.120 PF.T
4211 Artificial Sequence
<223 peptide in m13 coliphage
4400.- 143
His Trp Asp Phe Ala Trp Pro Trp
1.110 144
1.211 8
3212> PRT
```

24

```
Seq Listing.txt
<!213 Artificial Sequence</pre>
4.2200
#223 · peptide in m13 coliphage
-400 - 144
Pho Trp Gly Leu Trp Pro Trp Glu
0.216 · 145
·212 · PHT
213 - Artificial Sequence
. . . . . .
+1273 + peptide in m13 coliphage
-,466 - 115
Glm Lys Arg Ala Ala
\pm 1110 \pm 146
-211 - 5
+2120 PRT
<213   Artificial Sequence</pre>
-(220)
<22230 peptide in ml3 coliphage
-.400x 116
Ary Arg Arg Ala Ala
-2100-147
· ...11 · 5
<2120 FFT
Artificial Sequence
·12.201+
#2233 peptide in m13 coliphage
-C4000-147
Lys Phe Glu Arg Gln
```

```
· 210> 148
.211 - 3
· 211 > PRT
<113 Artificial Sequence</p>
. ...20 -
\sim 223 \, ^{\circ} peptide in ml3 coliphage
+400 \times 148
Arg Gly Tyr Val Tyr Gln Gly Leu
<210 × 149
. 111. 7
< 11.7 + PRT
 313 Artificial Sequence
+223 peptide in m13 coliphage
- 400 - 149
Tyr Thr Leu Val Gln Pro Leu
<210 > 150
<211 - 7
<2112 × PRT
3213% Artificial Sequer.ce
. 225 A
<223/ peptide in m13 coliphage
+400 + 150
Thr Pro Asp Ile Thr Pro Lys
  1
· ...10 · 151
\cdot 211 \cdot 7
· 317 · PFT
·213 · Artificial Sequence
<223/ peptide in m13 coliphage</pre>
```

Page 41

```
<400> 151
The Tyr Pro Asp Leu Arg Tyr
40.10> 152
.211: 7
-2100 PFT
+2130 Artificial Sequence
. . .
-...P30 peptido in m13 coliphago
3460 · 152
Asp Arg Thr His Ala Thr Ser
· . 10 · 153
·*.:11*· 7
- 21: PFT
+ M13 + Artificial Sequence
\{1,2,1,0\}^{n}
Him3 peptide in ml3 coliphage
+400 \times 153
Met Ser Thr Thr Phe Tyr Ser
R2100 154
-1.11 - 7
CULIDE FET
H213 Artificial Sequence
-.220a-
+11230 peptide in ml3 coliphage
- 400 - 154
Tyr Glr. His Ala Val Gln Thr
```

 $\pm 3.719 \times 155$ 

-1.111 - 7

:::1. · PRT

```
7120→
+123> peptide in m13 coliphage
+ 100 + 155
Phe Pro Phe Ser Ala Ser Thr
· 110 · 156
+211 + 7
· 113 · FRT
· Lli · Artificial Soquence
- 220 -
+333 * peptide in m13 coliphage
+100 + 156
Ser Ber Phe Pro Pro Leu Asp
-110 - 157
 1.11 - 7
 .112 - PET
·113 · Artificial Sequence
< 0.00 +</pre>
#323* peptide in m13 coliphage
400 - 157
Mrt Ala Pro Ser Pro Pro His
+210 + 158
. . 11 . 7
· 111 · PRT
- 13 · Artificial Sequence
+333  peptide in m13 coliphage
+ 400 + 158
Car Jor Phe Pro Asp Leu Leu
```

```
.210. 159
<.211 - 7
· 212 · FF.T
·213 · Artificial Sequence
9.229 S
www.ise peptide in ml3 coliphage
+400 + 159
His Ser Tyr Ash Arg Leu Pro
-210 - 160
×211 × 7
+312 + PFT
· 113 · Artificial Sequence
 72 - peptide in m13 coliphage
· 400 · 160
His Leu Thr His Ser Gln Arg
+ 010 + 161
42119 7
32132 PRT
%313 * Artificial Sequence
 220%
1977 peptide in ml3 coliphage
<400> 161
Gln Ala Ala Gln Ser Arg Ser
+210 + 162
· 1111 · 7
·212 · PFT
· 113 · Artificial Sequence
• 220 •
> 323 paptide in m13 colliphage
```

44002 162

```
Phe Ala Thr His His Ile Gly
  1
\times 310 + 163
·211 · 7
6212 6 PET
*213 · Artificial Sequence
+2200
+121 - peptide in m13 coliphage
400 - 143
Ser Met Pro Glu Pro Leu Ile
211
| 211
      . 4
     77
.212 - PRT
· 21: Artificial Sequence
- 226 -
+.23 · p-ptide in m13 coliphage
-400 \cdot 154
Ile Pro Arg Tyr His Leu Ile
-210/ 165
 211 - 7
-212 · FRT
3213 - Artificial Sequence
\cdot 323 \cdot peptide in m13 coliphage
+400 + 165
Ser Ala Pro His Met Thr Ser
 1
+.110 + 166
..11 . 7
· 212 · PET
<213 Artificial Sequence
```

```
Seq Listing.txt
::220×
<223 · peptide in m13 coliphage</pre>
<400 - 166
Lys Ala Pro Val Trp Ala Ser
\pm 1210 \times 167
<111 - 7
ROIDS PRO
HATE Artificial Sequence
.;" " t ...
```

<

1400 187

Leu Pro his Prp Leu Leu Ile

S.110 × 168 · 1: · 7

· [11] · PFT

\*213 \* Artificial Sequence

< 220 ×

<223> peptide in m13 coliphage

 $< 400 \times 168$ 

Ala ser Ala Gly Tyr Glm Ile

<210x 169

· 111. · 7

·2120 PRT

<2130 Artificial Sequence</pre>

<22.20°

<2230 pertide in m13 coliphage</pre>

<4000 · 169

Val Thr Fro Lys Thr Gly Ser 1

+210> 170

```
·211 · 7
4212 · PRT
-C13 · Artificial Sequence
.:229 -
<223 - peptide in m13 coliphage</p>
-.400 + 170
Glu His Pro Met Pro Val Leu
                   ξ,
-21:1 - 171
<213 - Artificial Sequence</p>
- 220 -
+ Allow peptide in m13 coliphage
+400 - 171
Val Ser Ser Phe Val Thr Ser
· 110/- 172
· 211* · 7
S2125 FFT
+213> Artificial Sequence
<222 peptide in m13 coliphage</p>
<4000-172
Ser Thr His Phe Thr Trp Pro
 1
+2100+ 173
- 111 - 7
+211: PET
* 2137 Artificial Sequence
\cdots = (j_{\infty}^{+})
+2230 peptide in m13 coliphage
4400 - 173
```

```
Seq Listing.txt
Gly Gln Trp Trp Ser Pro Asp
+210 \ 174
*212 * PRT
Milio Artificial Sequence
-220 -
+223 peptide in m13 coliphage
+ 400 + 174
Gly Pro Pro His Gln Asp Ser
\pm 216 \pm 175
-.11 - 7
· PRT · PRT
· 113 · Artificial Sequence
- 220 -
• 223 peptide in m13 coliphage
+400 + 175
Asn Thr Leu Pro Ser Thr Ile
  1
+110> 176
1211: 7
+210 + PRT
· 11: Artificial Sequence
* : <u>2.26</u> . .
+2.23 · peptide in m13 coliphage
- 400> 176
His Gln Pro Ser Arg Trp Val
· 210 · 177
+311 + 7
· 210 - PRT
· 713 · Artificial Sequence
<.220 -
```

Seg Listing.txt 223> peptide in m13 coliphage 4400 - 177 Tyr Gly Asn Pro Leu Gln Pro -1210 - 178  $-11 \cdot 7$ HIII2 - PRT +213 · Artificial Sequence 4.200 e H2.73 peptide in m13 coliphage -400. 178 Phe als Trp Trp Trp Gla Pro + J10/- 179 · 211, · 7 · 112/ PET +213 · Artificial Sequence · [] [] (). · +223 - peptide in m13 coliphage · 4000 · 179 He Thr Leu Lys Tyr Pro Leu +210. - 180·211: 7 · 2123 FRT +213 · Artificial Sequence +0.3 peptide in m13 coliphage +4001-180 Plus His Trp Pro Trp Leu Phe 10 131 

Seq Listing.txt <212> PRT <213 · Artificial Sequence - 220 -SIZE Random peptide in coliphage M13 · 400 · 131 Thr Ala Gln Asp Ser Thr Gly -210 - 192 211 - 7 · J1L · FRT /213/ Artificial Sequence 2000 C 223 peptide in m13 coliphage  $-400 \cdot 132$ The His Trp Trp Gln Pro +310 - 183 -211 - 7 <210 - PRT <213 - Artificial Sequence +220 - $\circ 223 \cdot \text{peptide in m13 coliphage}$ ×400 × 183 Fhe His Trp Trp Asp Trp Trp 1 +310 + 184 +.111 + .7· 八丁 : PRT +213 · Artificial Sequence <220 × +323 peptide in m13 coliphage -400 134

Glu Pro Phe Phe Arg Met Gln

```
1
-:210 - 185
·211: 7
-.212.- PRT
<!?!! Artificial Sequence</pre>
-1220.-
-.1230 peptide in m13 coliphage
4400 - 185
The Trp Trp Leu Asn Tyr Arg
-12101-186
. . . . 1 / . 7
 212. ER1
 1.13 Artificial Sequence
-...3. peptide in ml3 coliphage
+4000 · 18€
Phe His Trp Trp Trp Gln Pro
·11101 197
.211. 7
+.1121 F.T
+213 Artificial Sequence
- 1200
+2230 peptide in m13 coliphage
+4001-187
Gln Frc Ser His Leu Arg Trp
+17101-188
-12111 - 7
```

-1.11,21- PET

+213: Artificial Sequence

·1.126 ·

\*(223) peptide in ml3 coliphage

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```
<400 · 188
Ser Pro Ala Ser Pro Val Tyr
4210 - 189
. 111 - 7
2012 - PRT
+213 - Artificial Sequence
+123 peptide in m10 coliphage
+4000-189
Phe His Trp Trp Trp Gln Pro
+210. 190
· . 1.1. · 7
- "... T.s - FFT
Allia Artificial Sequence
+223 peptide in ml3 coliphage
+1400. 190
His Pro Ser Asn Gln Ala Ser
.****0** 191
...11. 7
·*I 12: • FF.T
+1130 Artificial Sequence
·*220:
+MAR: peptide in ml3 coliphage
+14000+ 191
Asn Ser Ala Pro Arg Pro Val
1.13 102
HI111 7
<2129 PET
```

```
Seq Listing.txt +212 + Artificial Sequence +210 + +22: + peptide in m13 coliphage +400 + 192
```

Sin Leu Trp Ser Ile Tyr Pro 1 5

/ 110 / 193 / 111 / 7 | 111 PRT

\*:13\* Artificial Sequence

Car Trp Fro Phe Phe Asp Leu

+ 210 + 194 + 211 + 7

4.00 - 1.93

%311> PRT
%213> Artificial Sequence

+220>
+203> peptide in m13 coliphage
400> 194

Asp Thr Thr Leu Pro Leu His

· 110 · 195 · 111 · 7 - 111 · PET

· 713 · Artificial Sequence

 $\pm 220 \times \pm 223 \times \text{peptide in m13 coliphage}$ 

· 400 · 195

T:p His Trp Gln Met Leu Trp
1 5

```
42105 196
1211 - 7
PET . PET
+213 + Artificial Sequence
-,220 -
HALLS peptide in ml3 coliphage
+400 \times 196
Asp Ser Phe Arg Thr Pro Val
210 - 197
. . 11 . 7
· .. lift · PhT
.dl-.Artificial Sequence
- 220
+323 peptide in m13 coliphage
+400 + 197
Thr Jer Pro Leu Ser Leu Leu
HU710H 198
-211-7
<212> PET
+213 + Artificial Sequence
2000
+2030 peptide in ml3 coliphage

    4000 198

Ala Tyr Asn Tyr Val Ser Asp
= 11(m · 199
• .:::::· 7
+12121+ PET
AMADA Artificial Sequence
1.1.2
<223 peptide in m13 coliphage
```

```
-1400 > 199
```

Arg Pr: Leu His Asp Pro Met

- -210 200
- · 211 · 7
- <!212 + FRT</pre>
- +113 · Artificial Sequence
- +223 poptide in ml3 coliphage
- -499 150

Trp Fro Ser Thr Thr Leu Phe

- \_1...101 -.11 7
- ·. 12. FF.T
- -\_ls Artificial Sequence
- -113 peptide in m13 coliphage
- +400% 201

Ala Thr Leu Glu Pro Val Arg

- -..19.-202
- .11: 7
- Sails FRT
- + 213 Artificial Sequence
- +2:3: peptide in ml3 coliphage
- -.400 .302

Ser Met Thr Val Leu Arg Pro

- +17101 203 +1711 7
- KIZ1L\*+ PRT
- <213. Artificial Sequence

```
K220 ·
-(223 · peptide in m13 coliphage
-.400 - 203
Gin The Gly Ala Pro Ser Trp
\pm 1210 + 204
+1.111 \times 7
H212 - PRT
1213 Artificial Sequence
-:220:-
<:123. peptide in m13 coliphage</pre>
400 004
Ala Pro Asp Leu Tyr Val Pro
+12100 - 205
· 21 II 7
· J12. PRT
+2130 Artificial Sequence
-:020:s
+0230 peptide in ml3 coliphage
+14001- 205
And Met Pro Pro Leu Leu Pro
1 5
+1100+206
+.2111 + 7
+12121- FRT
+21E Artificial Sequence
-.2200:-
+3223 peptide in ml3 coliphage
-:400> 206
Ala Lys Ala Thr Pro Glu His
```

```
\pm 210 + 207
-211 - 7
HU12 · PRT
<213 - Artificial Sequence</p>
·.020 ·
+123 + peptide in ml3 coliphage
+400 - 217
The Pro Pro Leu Arg Ile Asn
+1210 + 138
+211 + 7
·..12 · PF.T
POLY Artificial Sequence
1000 peptide in mls coliphage
+400 + 1.08
Lew Pro Ile His Ala Pro His
- 2100 J09
5.711 × 7
-212 PFT
+213 - Artificial Sequence
*PRR* peptide in ml% coliphage
-14000- 209
Asp Let Asn Ala Tyr Thr His
-1. 101- 10
·1711 · 7
+12121+ PF.T
+2213 + Artificial Sequence
-1.120.-
1323 - peptide in mis coliphage
400/ 210
```

```
Val Thr Leu Pro Asn Phe His
+:210 + 211
HILL: PRT
+213 · Artificial Sequence
-.220 -
+123 + peptide in m13 coliphage
1400 711
Asn Ser Arg Leu Pro Thr Leu
 1
_10, 312
 1.11 7
 213 - PET
...1E: Artificial Sequence
4 <u>2 2 0</u> , 4
+M230 peptide in ml3 coliphage
<14000 712
Tyr Fro His Pro Ser Arg Ser
 l
-..100-213
.211: 7
+ 212" + FF.T
s.::13. Artificial Sequence
4.22004
+00230 peptide in ml3 coliphage
44000 113
Gly Thr Ala His Phe Met Tyr
·11100 - 214
\cdot 1.211. \cdot 7
1212: PET
<213 - Artificial Sequence
```

```
-1000 s
```

·223 · peptide in m13 coliphage

· 400 · 214

Tyr Ser Leu Leu Pro Thr Arg

- $\pm 210 \times 215$
- .011.7
- HULLING PRT
- 213 Artificial Sequence

- 2200

+223 peptide in m13 coliphage

<400 × 315

Leu Fro Arg Arg Thr Leu Leu 1 5

- 210 216
- . . 11
- -211 PRT
- +213 · Artificial Sequence

42005

<223> peptide in m13 coliphage

<400> 016

Thr Ser Thr Leu Leu Trp Lys
1 5

- <310> 317
- <0.11 > 7
- 2012 > PRT
- · 213 / Artificial Sequence

- 200 a

+3.3 · peptide in m13 coliphage

+400 - 217

Thr Ger Asp Met Lys Pro His

<.::0 218

```
·:211 · 7
·212 · PFT
+213 · Artificial Sequence
- 220 -
*223 * poptide in m13 coliphage
+.400 + 218
Thr Ser Ser Tyr Leu Ala Leu
+213, 219
+.211 + 7
-2120 PPT
«113» Artificial Sequence
13.
Aller peptide in mlE coliphage
-400 - 219
Asr. Leu Tyr Gly Pro His Asp
<210% 200
<.111> 7
<0112 PPT
<.130 Artificial Sequence</p>
-10.20
#2230 peptide in m13 coliphage
44000-220
Leu Glu Thr Tyr Thr Ala Ser
\pm 1.10 \pm 221
-1-11 - 7
\pm 212 + PPT
-1113 - Artificial Sequence
L^{2}\left( \left( 1, \frac{1}{2}, \frac{1}{2} \right) \right) = L
+223 - peptide in m13 coliphage
<4092 221
```

Seq Listing.txt Ala Tyr Lys Ser Leu Thr Gln H010> 222 H212 - PET Hills - Artificial Sequence 4:220 × HAMB: poptide in ml3 coliphage 1400 - 212 Ser Th: Ser Val Tyr Ser Ser 10 - 13 211 Lla PET .. 13 Artificial Sequence 1993 - poptide in m13 coliphage -400 - 113 Glu Gly Pro Leu Arg Ser Pro -.2100-224 -111. 7 EET FET +0.13 - Artificial Sequence 4.12.2 0° 4 -0003 peptide in ml3 coliphage +1400\*+ 224 Thr Thr Tyr His Ala Leu Gly 1 +1210.+ 225 1.11 7 -1212 PET KN1N Artificial Sequence

<2201-

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```
Seq Listing.txt
<223 peptide in m13 coliphage
×400 · 225
Val Ser Ile Gly His Pro Ser
· 210 · 226
-211 - 7
< D1D / PPT</pre>
+213 - Artificial Sequence
<223 - peptide in ml3 coliphage
~ 400 + 216
Thr His Ser His Arg Pro Ser
· 210 · 3.7
-.117 PFT
+213 - Artificial Sequence
<.220 x
{\sim}223{\sim} peptide in m13 coliphage
<400 - 227
Ile The Asm Pro Leu Thr Thr
<210× 028
<211 - 7
+1112 PPT
<213> Artificial Sequence
<2000 kg
+2230 peptide in m13 coliphage
~4000-003
Ser Ile Gln Ala His His Ser
· 2101 · 229
.211> 7
```

HARLEY PET

</p

%.32F / peptide in ml3 coliphage

+14001- 229

Leu Asn Trp Pro Arg Val Leu 1 5

·::10:- 230

· [111. - F

HILLS PET

+1113 Artificial Sequence

+::::::::peptide in m13 >:::!!phage

· 4000 - 230

Tyr Tyr Tyr Ala Pro Pro Pro

+12100 231

. 211: 7

<0.120 PET</pre>

+213: Artificial Sequence

 $s_{i}^{(i,j)}(\hat{j})(\cdot)$ 

-2232 peptide in m13 coliphage

-04030-251

Ser Leu Trp Thr Arg Leu Pro

+1210.+ 232

 $\cdot 1211 \cdot 7$ 

POST PET

+ 211 H: Artificial Sequence

• 1.1.1 G

+323 peptide in ml3 coliphage

<400 - 232

Asn Val Tyr His Ser Ser Leu

42101-233

<211: 7

1

HILLS PET

<::113 Artificial Sequence</pre>

40220 -

<!233 - peptide in ml3 coliphage</pre>

5

-.4995 233

Ash Cer Pro His Pro Pro Thr

+110 + 234

 $\cdot 1.1 \cdot 7$ 

-DAR FET

- Miss Arrificial Sequence

 $\cdot (1) \subseteq C^*$ 

+L..3 - pertide in ml3 coliphage

-.400 - 234

Val Pro Ala Lys Pro Arg His

<12100 235

-.11 - 7

·1.12" FET

HALBY Artificial Sequence

- <u>[] [</u>] [] [] -

<2231/ peptide in m13 coliphage

·4000 235

His Asn Leu His Pro Asr. Arg

·2100 236

· 212. · PRT

+2213 · Artificial Sequence

· . . . . . . (1

<223> peptide in m13 coliphage

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₹400. 236 Ty: Th: Th: His Arg Trp Leu K2101-237 <211° 7 <.112 - PET +213 - Artificial Sequence . 226.5 .^???> peptide in m13 coliphage <4000 237 Ala Val Thr Ala Ala Ile Val +3100 -338 +2119 V + MILL PET · 213 · Artificial Sequence +2230 peptide in m13 coliphage <4005 238 Thr Leu Met His Asp Arg Val 11.00 2.29 <2115 7 <2120 PRT <21X Artificial Sequence</p> - 2200+ +223 peptide in m13 coliphage +1400. - 239 Thr Pro Leu Lys Val Pro Tyr

1.110 - .40

-1212> PET

```
<213  Artificial Sequence</p>
<2.35 peptide in m13 coliphage</p>
<400 · 240
Phe Thr Asn Gln Gln Tyr His
+210 + 241
· Pill · FrT
+218. Artificial Sequence
\sim 1000
+ 703 - peptide in ml3 coliphage
+400 + 241
Her His Val Pro Ser Met Ala
 1
...10 + 242
+211 + 7
Killer FFT
%213 · Artificial Sequence
-3220,×
*12.25% peptide in ml3 coliphage
400.2 242
His Thr Thr Val Tyr Gly Ala
#210 · 243
. 211 - 7
+212 → PRT
1.13 · Artificial Sequence
· 220 ·
+333 · peptide in m13 coliphage
-.400 \times 243
Thr Glu Thr Pro Tyr Pro Thr
```

```
HIRD 244
·:.(11 · · ·
HILLIZH PRT
11113 Artificial Sequence
-1220°-
-...23 peptide in ml3 coliphage
-1400,- 144
Leu Thi Thr Pro Pho Sor Sch
ा १७५ सम्प
LITE Artificial Sequence
3 (1) ·
+M230 peptide in m13 coliphage
ក្នុជ្ជប៉ុន្តែ និង្គីមួ
Gly Val Pro Leu Thr Met Asp
#2100 046
\pm 1.2111 \pm 7
(1.712) - \text{FF.T}
H1130 Artificial Sequence
31200
-123% peptide in ml3 coliphage
-14000 1.46
Lys Leu Pro Thr Val Leu Arg
+10101- 247
·1111 ~
· 1.121 PFT
HL132 Artificial Sequence
<.1202
<223> peptide in m13 coliphage
```

```
~400 · 247
```

Cys Arg Phe His Gly Asn Arg

- $\pm 210 \pm 248$
- $<211 \cdot 7$
- HILL: PRT
- +213 · Artificial Sequence
- 130 -
- / 23 \* peptide in ml3 coliphage
- 400 > 548

Tyr Thr Arg Asp Phe Glu Ala

- -310-349
- -211 7
- 212 FRT
- · .: 13 · Artificial Sequence
- \* JJ0 ·
- 223 peptide in m13 coliphage
- $\pm 400 + 249$

Ser Ser Ala Ala Gly Pro Arg 1 5

- 210 750
- 4.1123 PET
- \*213 \* Artificial Sequence
- 220 ×
- +223 · peptide in m13 coliphage
- · 400 · 150

Ser Leu Ile Gln Tyr Ser Arg 1 5

- +2100+251
- · 2111 \* \*\*
- · ...120 PET
- <21% Artificial Sequence</pre>

```
· ;: : : ) >
 223 - peptide in m13 coliphage
- I
HODEL - MISC FEATURE
-12... (7) ... (7)
H....3 unknown
4400 - 251
Asp Ala Leu Met Trp Pro Xaa
+1710 + 152
-.211 - 7
· .... PEN
· 11: Artificial Sequence
*a. . !:
...: peptide in m13 coliphage
· 1 1 1
+1.21 MISC FEATURE
+...112...(3)...(3)
HL23: unknown
<14000 252
Ser Ser Haa Ser Leu Tyr Ile
111.7
+2120 PRT
H2130 Artificial Sequence
- 2200:
*MASS peptide in m13 coliphage
74000-153
Phe Asn Thr Ser Thr Arg Thr
 1
:::16% ::54
::::1::
:2112 PF.T
```

- -:213 · Artificial Sequence
- $\cdot \, \underline{1} \, \underline{1} \, \underline{1} \, \underline{1} \, \underline{0} \, \underline{0$
- .223 peptide in m13 coliphage
- +400% 254

Thr Val Gln His Val Ala Phe

- .210. 255
- +1711+ 7 + 1112+ FRT
- +333 Artificial Sequence
- +2.13 peptide in ml3 coliphage
- -400-255

Asp Tyr Ser Phe Pro Pro Leu

- -210. 256
- . . . 11 . 7
- -212.- PEC
- +213: Artificial Sequence
- · [][() -
- +2230 peptide in ml3 coliphage
- -400 256

Val Gly Ser Met Glu Ser Leu

- ·210 · 257
- · 111 · 7
- -212 FRT
- · MIP Artificial Sequence
- $\cdot$  (.)
- -223 peptide in m13 coliphage
- 40.20g/s
- HOLD + MISC FEATURE
- (2)...(2)
- R223/ unknown

```
41220 ×
+0001 + MISC_FEATURE
+1222 \cdot (6) \cdot ... (6)
-1113 - unknown
+1400 × 257
Pho Maa Pro Met Ile Xaa Ser
+2140+258
-2110-7
·212 · FF.T
· 213 · Artificial Sequence
10.76
 2.3 peptide in ml3 coliphage
× 400 × 238
Ala Fro Pro Arg Val Thr Met
+ 2100 - 259
- 2111- 7
< 2120 FRT

</p
<1220%
+ML30 peptide in ml3 coliphage
-4001-239
Ile Ala Thr Lys Thr Pro Lys
-00100-260
-1.11: 7
-J1120- PRT
-1213: Artificial Sequence
+(220)+
KARRY peptide in ml3 coliphage
K400. ..60
Lys Pro Pro Leu Phe Gln Ile
```

\_

<210 > 261

·::11 · 7

HILL PRT

H213 Artificial Sequence

·11.20.

+223 \* peptide in ml3 coliphage

-.4008 161

Tyr His Thr Ala His Ash Mot

HU10% 262

-.111.-7

Harain FET

Cula: Artificial Sequence

· " [ () " ·

All to peptide in ml3 coliphage

-.4100 - 262

Ger Tyr Ile Gln Ala Thr His
1

<12101-763</p>

·1.111 7

02120 PET

+2213 · Artificial Sequence

- ... \_ 1 (... -

+2.23 peptide in ml3 coliphage

-1400F- 263

Ser Ser Phe Ala Thr Phe Leu 1 5

·C10 · ..64

+0.111 + 7

 $\leq 2.111 + \mathrm{PET}$ 

<::13 Artificial Sequence</pre>

2 1 7 1 .

<2237 peptide in m13 coliphage

```
₹400> 264
 Thr Thr Pro Pro Asn Phe Ala
  1
+210 + 365
 .311 . 7
+312 + PRT
·213 · Artificial Sequence
, 500,
+227 - puptide in m13 coliphage
- 4002 265
lie Ser Leu Asp Pro Arg Met
*111: 156
+211 + 7
· LII · PFT
+ 213 Artificial Sequence
+223 peptide in m13 coliphage
· 400 : 266
Ser Leu Pro Leu Phe Gly Ala
2010. P67
12112 7
<210 · PFT
2013 Artificial Sequence
- 220 -
#223 peptide in m13 coliphage
× 400 × 267
Asn Leu Leu Lys Thr Thr Leu
```

1 5

+310 259

. 21! . 7

· 212 · PF.T

```
Seq Listing.txt
<213> Artificial Sequence
40220→
4223→ peptide in m13 coliphage
<400 → 268
Asp Gln Asn Leu Pro Arg Arg
1. 10 - 269
-211 · "
.111 · PRT
·213 · Artificial Sequence
- 220 A
40033 - peptide in ml3 coliphage
400 + 169
Ser His Phe Glu Gln Leu Leu
-010 - 270
-.11 - 7
+212 + PRT
·213 · Artificial Sequence
- 1.10
<223> peptide in m13 coliphage
+400 + 270
Thr Pro Gln Leu His His Gly
+210 + 271
-211 - 7
· 212 · PRT
+213 · Artificial Sequence
· 0.00 ·
<223 peptide in m13 coliphage</pre>
400 - 171
Ala Pro Leu Asp Arg Ile Thr
```

```
+210 + 272
-211 - 7
· 212 · PRT
%31: Artificial Sequence
<2.20 ·
%123 reptiqe in m13 coliphage
×400 × 273
Phe Ala Pro Leu Ile Ala His
+210 + 273
-11 - 7
. 111 - PRT
 . 13 Artificial Sequence
+1.13 + peptide in m13 coliphage
- 400 - 273
For Trp Ile Gln Thr Phe Met
<210 · 274
<211× 7
+ 212× PRT
·213 · Artificial Sequence
3 220 B
·133 · peptide in m13 coliphage
< 400 × 274
Asn Thr Trp Pro His Met Tyr
-210 - 275
· 211 - 7
· 212 · PET
+213 - Artificial Sequence
+225 peptide in m13 coliphage
```

<400 ⋅ 275

Glu Pro Leu Pro Thr Thr Leu
1 5

 $\pm (210 + 276)$ 

-1211 - 7

HILLIUM PRT

Artificial Sequence

31212 ft 3

KANAS peptide in ml3 coliphage

5400 - 276

His Gly Pro His Leu Phe Asn 1

A211 - 277

-1.111 + 7

4217 + PFT

HILL: Artificial Sequence

<1220 ×

<223 peptide in m13 coliphage</pre>

-1400 - 277

Tyr Leu Asn Ser Thr Leu Ala 1 5

KD100-D78

<21.0% PRT

<213> Artificial Sequence

-100 GD-

<2230 peptide in m13 coliphage</pre>

-14000 - 278

His Leu His Ser Pro Ser Gly
1 5

+0:10:- 279

4111.4

 $\cdots$ 11  $\cdots$  FET

RE133 Artificial Sequence

```
#229 ¥
·223 peptide in m13 coliphage
5400× 279
Inr Leu Pro His Arg Leu Asn
-210 - 280
+211 \times 7
· 212 - FRT
·113 · Artificial Sequence
+ 220 >
-123 · peptide in m13 coliphage
+400 + 260
Sur Ser Pro Arg Glu Val His
+010 + 081
+211 + 7
+212 + PRT
·113 · Artificial Sequence
<2220%
%223 peptide in m13 coliphage
<400 > 0.81
Ash Glr Val Asp Thr Ala Arg
+ 210 + 282
\cdot 211 \cdot 7
0012 - PRT
·113 · Artificial Sequence
-123 peptide in m13 coliphage
+400 + 282
Tyr Pro Thr Pro Leu Leu Thr
```

- · 210 ~ 283
- .211 . 7
- -212 PRT
- · 313 · Artificial Sequence
- · 220 ·
- +2.23 · peptide in m13 coliphage
- +400 + 283
- His Fro Ala Ala Phe Pro Trp
- <210. 084
- -211 7
- 42124 PRT
- +.:!3\* Artificial Sequence
- . . . ().
- 223 peptide in m13 coliphage
- 400 .:84
- Leu Leu Pro His Ser Ser Ala 1 5
- <210> 285
- <011> 7
- <212> PRT
- <213> Artificial Sequence
- 2000
- \*\*\*\*\* peptide in m13 coliphage
- 4400 > 285
- Lou Glu Thr Tyr Thr Ala Ser 1 5
- +210 + 086
- +211 + 7
- 4212 # PRT
- +213 Artificial Sequence
- 1223 reptide in m13 collphage
- < 4000 286

```
Lys Tyr Val Pro Leu Pro Pro
H.:10 287
-1211 - 7
4212 - PRT
+213 + Artificial Sequence
-1226
. . . . . peptide in ml3 coliphage
-400 187
Ala Pro Leu Ala Leu His Ala
210 288
111 7
 .::13 PRT
+.:13. Artificial Sequence
+(1,1,2,0)\rightarrow
Flandom peptide in coliphage M13
+1400. - 288
Tyr Glu Ser Leu Leu Thr Lys
+11100-289
-1211. 7
- /12'- PET
+213 Artificial Sequence
* * () -
+1223 peptide in ml3 coliphage
+4000 - 289
Our His Ala Ala Ser Gly Thr
 1
·...100 - 290
·:::11:- 7
1.112 > FET
<213> Artificial Sequence
```

<2220%

+223 peptide in m13 coliphage

4.400. 290

Gly Leu Ala Thr Val Lys Ser

<2100 291

·.21i:- /

<2120 PRT

+213 Artificial Sequence

220.4

-22%- peptide in m13 coliphage

-(400)- .191

thy Ala Thr Ser Phe Gly Leu

- 11: 192 - 11: 7

HILL FRT

+21 - Artificial Sequence

· (220)

+2230 peptide in ml3 coliphage

+4000-192

Lys Fre Ero Gly Pro Val Ser

-m10-293

-211: 7

 $\pm 12.120 \pm FET$ 

+12130 Artificial Sequence

-12<u>1</u>00-

AMBBOO peptide in m13 coliphage

+:4000- 293

Thr Leu Tyr Val Ser Gly Asn

HZ10> 294

- . 211 > 7
- <212 + PET</pre>
- ·213 · Artificial Sequence
- 220 -
- < 2.23 > peptide in m13 coliphage
- +400+294

His Ala Pro Phe Lys Ser Gln 5

- -113-335
- ×211 × 7
- -211 PRT
- · 213 · Artificial Sequence
- + <u>1</u>26 +
- Fills peptide in ml3 coliphage
- 400 295

Val Ala Phe Thr Arg Leu Pro 1 5

- -210 136
- < 211 :- 7
- <210> PRT
- · 313 Artificial Sequence
- +0.00s
- <223 peptide in m13 coliphage</pre>
- × 400× 236

Lou Pro Thr Arg Thr Pro Ala 1 5

- ×310 × 397
- +211 + 7
- · 212. · PFT
- <213 · Artificial Sequence
- 11.11 C •
- $\pm 223 \pm \text{peptide}$  in m13 coliphage
- · 400. · 297

```
Seq Listing.txt
Ala 3er Phe Asp Leu Leu Ile
+210 - 298
1211 - "
<dild - PRT</pre>
- :: 1: Artificial Sequence
4(220 ×
....3  peptide in m13 coliphage
4400 208
Arg Met Asn Thr Glu Pro Pro
111 7
FET PET
213 Artificial Sequence
14.20 U.S.
-223    peptide in m13 coliphage
-1400 - 299
Lys Met Thr Pro Leu Thr Thr
 1
<210 - 300
<211 × 7
1212 PPT

Artificial Sequence
4000
+2223 peptide in m13 coliphage
-:400 - 300
Ala Asr. Ala Thr Pro Leu Leu
+12101- 301
1211 7
```

40 12 PFT

02100 Artificial Sequence

<12200

```
Seq Listing.txt
+223 peptide in m13 coliphage
 400 - 301
Thr Ile Trp Pro Pro Pro Val
-10 - 302
\cdot 111 \cdot 7
· 212 / PRT
-313 Artificial Sequence
7.220 F
 223 peptide in ml3 coliphage
+400 + 302
Gin Thr Lys Val Met Thr Thr
+..10 + 363
-111 - 7
· 112 - PET
+313 · Artificial Sequence
· 220 ·
+223> peptide in m13 coliphage
< 400 > 303
Asn His Ala Val Phe Ala Ser
· .10 · 304
> 211> 7
+212 + PFT
·213 · Artificial Sequence
- 000
+3330 peptide in m13 coliphage
· 10.001 ·
\cdot 221: MISC FEATURE
+3329 (5)..(5)
+2230 unknown
+ 4000 304
```

Seq Listing.txt Leu His Ala Ala Xaa Thr Ser 1 +(210 > 305 4011 - 7 -212 > PRT 4.213> Artificial Sequence -1120× < (400) 305 Inr Prp Gln Pro Tyr Phe His 5 4.110 - 306  $\pm 7.11 \pm 7$ · ILI · PET 213 Artificial Sequence +223 - peptide in m13 coliphage -1400 + 306Ala Pro Leu Ala Leu His Ala 1 <210> 307 -211 - 7 .212. PFT 1919/ Artificial Sequence ·:220> -223 peptide in m13 coliphage 4400 - 307 Thr Ala His Asp Leu Thr Val 1 -.210/ 308 ·1211 · 7 -1212 - PET

2213 Artificial Sequence

·122014

Page 84

Seq Listing.txt <223 peptide in m13 coliphage</pre> 1400 - 308 Ash Met Thr Ash Met Leu Thr -1210 - 309 . 111 . 7 HILL - PRT · Cli · Artificial Sequence -221 - peptide in ml3 coliphage 4400 - 309 May Ser Gly Leu Ser Gln Asp 4.719 + 310 4.222 × % MALL PRT Artificial Sequence -0000 HARB • peptide in m13 coliphage  $\pm 1400 + 310$ Thr Pro Ile Lys Thr Ile Tyr ·1210b 311 ·1.11.4 7 ·DID FRT -1113 Artificial Sequence +122(r) ++2230 peptide in m13 coliphage -14001-311 Ser His Leu Tyr Arg Ser Ser ·:::10:- 312 .:211:- 7

Seq Listing.txt <212> PET <213> Artificial Sequence 3000 A <!223 • peptide in m13 coliphage</pre> <400 + 312 His Gly Gln Ala Trp Gln Phe 7110 - 313 20114 G JOID FRT H213 · Artificial Sequence 41220 -Mills reptide in m13 coliphage  $\pm 400 + 313$ Lou Leu Leu Gly Thr Leu Asn Ile Val 1.  $\pm 1210 + 314$ 4.111 G HERE PRT 4213 · Artificial Sequence <0.00<223 · peptide in m13 coliphage</pre> 1400 - 314 Leu Leu Met Gly Thr Leu Gly Ile Val 1. -1210 - 315  $\cdot 1211 \cdot 9$ ·1212\* PET Hills Artificial Sequence  $+ (1) \cdot (1) \cdot$ +2730 peptide in m13 coliphage .400> 315 Thr Leu Gln Asp Ile Val Leu His Leu Page 86

```
Seq Listing.txt
```

```
1
                    5
(210 - 316
+1211 + 9
KILL PRT
+U13 · Artificial Sequence
-;<u>1</u>200 -
H223 - peptide in ml3 coliphage
·1400 · 316
Jly Leu His Cys Tyr Gla Gln Leu Val
-1114 - 317
HIII - PRT
 213 Artificial Sequence
Sec. 2. 2. 24. 8
- LL : peptide in ml3 coliphage
-.400. \cdot 317
Pro Leu Lys Gln His Phe Gln Ile Val
-2100-318
-111 32
· 2123 · DNA
HM130 Artificial Sequence
1.220.1
HDD3: random DNA in m13 coliphage
-14000-318
                                                                         32
agailatacat atggatgatg aagtcgacgt gg
+2101-319
1.111 35
·2121 DNA
HALL F. Artificial Sequence
1.1.2115
<223> random DNA in ml3 coliphage
```

```
-:400 · 319
```

taggatestt acaatteate ettetetgta gatte

35

- <210 → 320
- <211 5
- RELEASE PRT
- <
- -1220 -
- H223 Random peptide in coliphage M13
- -1400 320

Pho His Trp Trp Trp

- W110: 321
- 3211 · 18
- /212|- PFT
- +213: Artificial Sequence
- +12201+
- +2231 hybrid peptide
- -0400F 321

Ser Ile Ile Asn Phe Glu Lys Leu Gly Ser Gly His Trp Asp Phe Ala 1 5 10 15

Trp Pro Trp